to 120 minutes after a double-blind food challenge in a large series of children. These reactions are often accompanied by gastrointestinal and respiratory symptoms and elevations of plasma histamine levels. The most common offending food allergens are egg, milk, peanut, seafood, wheat, and soy. Avoiding offending foods is generally associated with an abatement of the dermatitis. Follow-up studies have shown a loss of sensitivity with age in some children.

Incidence and prevalence figures cannot be gleaned from these studies as the subjects represent a highly selected, university referral population. A reasonable estimate suggests that 10% to 20% of children and less than 10% of adults have worsening of their eczema because of food allergy. Scratch test results and serum radioallergosorbent test levels show 80% false-positivity, but negative tests are 90% reliable in ruling out food-induced dermatitis. Restricting suspect foods to allow clearing of the dermatitis—usually for three to seven days—followed by challenge, in a blind manner, if necessary, is the only sure means of diagnosis. Wide-ranging restrictions based on positive skin tests are unreasonable and can lead to malnutrition. Restricting highly allergenic foods such as cow's milk, eggs, or peanuts from infant diets, while of unproved efficacy, may be worthwhile for the offspring of highly atopic parents, especially those with atopic dermatitis.

The main focus of the nutritional aspects of diet in atopic dermatitis has been, in recent years, the feeding of evening primrose oil. This may have originated from the erroneous association between eczematous skin and cutaneous changes induced by essential fatty acid deficiency. A later conceptual rationale implied that replacing deficient γ-linolenic acid (GLA), present in varying concentrations in evening primrose oil, might correct changes induced by excessive arachidonic acid-derived, proinflammatory eicosanoids. While the results of one clinical trial suggested positive effects, a subsequent study failed to detect any therapeutic benefit. Newer research indicates that high doses of GLA may have antileukotriene effects and a therapeutic benefit in some patients. A final resolution of this contentious issue requires controlled therapeutic trials with standardized material of known GLA content and careful monitoring of skin delivery. At present, dietary treatment with currently available evening primrose oil cannot be recommended for atopic dermatitis.

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Copper Vapor and Dye Laser Therapy for Cutaneous Vascular Disorders

SINCE THEY WERE FIRST introduced in the early 1960s, visible light lasers have played an important role in treating vascular conditions. Initially the blue-green light from the argon laser was used because its emission overlapped the absorption spectrum of oxyhemoglobin. It became readily apparent, however, that this laser-tissue interaction was imprecise and that there was also interference resulting from absorption by the melanin found in the overlying epidermis. The combined effect was the occasional production of scarring or permanent textural changes that provided an unsatisfactory cosmetic result.

As a consequence of these unacceptable side effects, improved light sources for treating vascular conditions have long been awaited, and recently three new laser systems have been developed, all of which are capable of producing yellow light. Improved laser-tissue interaction is possible with the use of yellow light at a wavelength of 577 nm because it is precisely absorbed by oxyhemoglobin at its β-absorption peak. In addition, absorption interference by epidermal melanin is substantially reduced at this longer wavelength, so there is less damage to the skin surface.

The argon-pumped tunable dye laser, the first of these new systems to be introduced, uses an argon laser to energize an organic dye solution to produce yellow light having a continuous output. Although this laser light can be mechanically or electronically pulsed, the duration of these pulses is relatively long—on the order of 0.05 seconds. Light from this laser typically is delivered in slightly overlapping 1- to 2-mm spots to the surface of large vascular lesions like port-wine stains or at spaced points along the length of telangiectatic blood vessels.

A new technique has been developed that uses a small beam (100 μm) from an argon-pumped tunable dye laser. With low power—0.08 W to 0.18 W—and continuous discharge, individual blood vessels in port-wine stains or telangiectasia are traced out and removed with the aid of magnified vision. This technique spares injury to the adjacent normal skin, minimizes damage to the overlying epidermis, limits postoperative wound care, and permits a rapid clearing of the vessels. Furthermore, in many cases substantial improvement can be seen after only a single treatment. This procedure permits safe and effective treatment of port-wine stains found even in areas that traditionally have been associated with a high risk of scarring, such as the upper lip and lateral neck. Children with port-wine stains also may be treated without substantial risk of scarring.

More recently, the use of short pulses of laser light to damage blood vessels selectively has been made possible with the introduction of a second type of dye laser, the flash-lamp-pumped pulsed dye laser. This laser system uses a flash lamp to energize an organic dye solution, which yields a 3- to 5-mm beam of yellow light at either of two wavelengths: 577 nm or 585 nm. The flash-lamp-pumped pulsed dye laser produces very short pulses of light—from 360 to 450 microseconds in duration—that closely approximate the thermal relaxation time for small blood vessels. This short pulse results in selective heating of the vascular lumen and immediate purpura formation but causes no substantial injury to surrounding tissue or to the overlying skin surface. The purpura that develops immediately after treatment will typically take between 10 and 14 days to resolve and is commonly replaced by a brownish discoloration that may last an additional week. This technique provides good results in treating small blood vessels, but multiple re-treatments are commonly required to produce satisfactory lightening. Although pulsed dye laser therapy initially was thought to have little risk of complications, abnormal textural changes, scar formation, and postoperative hypopigmentation have all been reported.

The copper vapor laser produces even shorter pulses of

yellow light than the flash-lamp-pumped pulsed dye laser. The copper vapor laser produces yellow light with a wavelength of 578 nm. This laser system is used in a quasi-continuous mode of operation; the individual pulses are so short—on the order of 20 nanoseconds—they appear to be emitted in continuous fashion. This laser system is unique in that it can actually produce a variable blend of yellow and green light, depending on the temperature of the elemental copper within the optical cavity. The benefit of using the extremely short pulses of light from the copper vapor laser for treating vascular lesions is that undesired thermal effects are limited by reducing the length of exposure.

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Cutaneous Aspects of Child Abuse

CHILD ABUSE continues in epidemic proportions, and all health care professionals are increasingly called on to assist in its diagnosis. Because 90% of abused children have mucocutaneous signs, dermatologists often are involved in its assessment. Bruises, sexual abuse, and burns are the foremost findings in abused children. Atypical sites for accidental trauma such as the buttocks, inner thighs, and perigenital areas should raise suspicion, as should mucosal trauma. Linear, angular, and loop-shaped injuries are highly suggestive as well. A lack of concordance between the caretaker's story and the observed injury is typical of an abuse situation.

Recent well-publicized incidents of apparent overreporting and false accusation of adults by some children have done a disservice to the urgent need for all professionals to continue to participate in the reporting process. Although parents reported without apparent culpability understandably feel victimized by child abuse laws, we as professionals must not be influenced by such protestations and must continue to look with tunnel vision at each child's potential vulnerability in every case of suspected abuse. Suspicion is the key word because every state requires us to report suspected, not proved, cases of child abuse. Can a condition such as condyloma acuminatum, always considered sexually transmitted in adults, not be considered suspicious in a toddler? Even if only 10% to 25% of cases are proved to be associated with sexual abuse, this is still a notable number of children at risk. Careful but sensitive investigation of risk factors is indicated in each case, and most cases not readily attributed to birth canal exposure require reporting.

Numerous cutaneous and mucosal disorders have occasionally been falsely attributed to child abuse: the so-called pseudo-abuse syndromes. Examples include the palpable purpura of vasculitis, southeast Asian customs such as coin rubbing and cupping, phytophotodermatitis from various plant constituents, and anogenital changes due to streptococcal infections or lichen sclerosus et atrophicus. To avoid wrongfully accusing the caretaker in these situations, expert consultation is often required. Whereas pediatricians and social workers remain paramount in managing child abuse cases, dermatologists should be increasingly involved because of their unique training in diagnosing and treating disorders of skin and mucous membranes, as well as sexually transmitted diseases.

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Oral and Topical Cyclosporine Therapy for Psoriasis

ANALOGOUS TO the discovery and development of methotrexate therapy for psoriasis, cyclosporine was first found to be an effective treatment for the psoriatic skin lesions of patients who were being studied for the drug's effect on psoriatic arthritis. In the decade since then, many investigators have reported cyclosporine efficacy in treating psoriasis when given orally, using a variety of doses ranging from 1 to 14 mg per kg of body weight per day. The results of these studies have generally shown that two thirds or more of patients have had total or substantial clearing of psoriatic lesions. With cessation of therapy, however, psoriatic lesions have recurred rapidly—within weeks.

Cyclosporine is a potent drug, and its use in organ transplant patients in high doses has produced notable adverse effects. Since psoriasis is a benign but sometimes very severe non-life threatening disease, the long-term use of cyclosporine may be limited. Clinical success in treating psoriasis has been associated with the two main side effects also seen in organ transplant patients: nephrotoxicity and hypertension. These changes are both dose-dependent and reversible, yet obviously they will limit the potential for widespread use of this drug in patients with severe or extensive psoriasis unless very low doses with minimal or negligible toxicity can be effective. Patients with severe psoriasis are now treated with phototherapy, methotrexate, or etretinate (Tegison). Another drug with an acceptable benefit to risk ratio would be welcome. For patients with mild psoriasis, there is little or no justification in using oral cyclosporine.

At the research level, the effect of cyclosporine therapy on psoriasis has reopened the question of the pathogenesis of this disease. In the past, psoriasis was not seriously considered to be an immunologically related disease. Cyclosporine has forced a re-examination of this possibility based on some of the drug's suggested mechanisms of action on immunologic systems. In the skin these include suppression of T-lymphocyte cells, interference with epidermal antigen-presenting dendritic cells, or effects on inflammatory cells. The question of whether cyclosporine may directly inhibit epidermal cell proliferation has yielded conflicting answers. Much research is needed to explore more fully the mechanisms by which cyclosporine can cause disease resolution (but not cure).

The intriguing clinical effects of oral cyclosporine have led to obvious attempts at determining whether the drug will